Gill

EXPANDED PROGRAMME ON IMMUNIZATION

RAINING COURSE ON PLANNING AND MANAGEMENT

Programme Targets

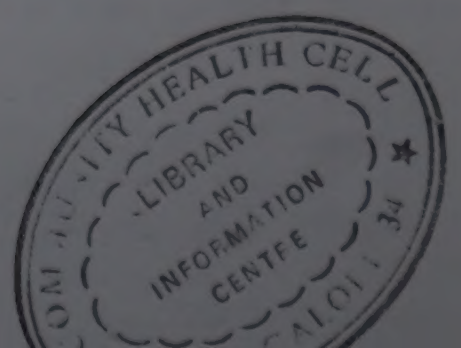
WORLD HEALTH ORGANIZATION

9308.

EXPANDED PROGRAMME ON IMMUNIZATION

TRAINING COURSE ON PLANNING AND MANAGEMENT

PROGRAMME TARGETS



PROGRAMME TARGETS

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PROGRAMME TARGETS

INTRODUCTION

Once regional priorities among diseases preventable by immunization have been established, targets for the immunization programme can be determined. In this module you will practice establishing targets for the first year of the immunization programme in Fictitia. The first year's programme will be limited in scope and will be expanded gradually over a 5-year period into a nationwide programme. Gradual expansion allows a country to test its methods for achieving and measuring targets in a small area or areas before spending significantly larger amounts of money on an untried nationwide programme.

The first step in planning an immunization programme is to determine your programme objective. This programme objective is a general statement of the mission and scope of the immunization programme. It is not a quantified statement, and therefore its achievement cannot be measured. The objective of the Expanded Programme on Immunization (EPI), as stated by the World Health Organization (WHO), is to reduce morbidity and mortality resulting from measles, diphtheria, poliomyelitis, pertussis, tetanus and tuberculosis by providing immunization against these diseases for every child in the world by 1990. Each individual country may need to modify this objective to be consistent with its needs. Such modifications may include a change in the number and/or types of vaccines to be provided, and a change in the year by which national coverage will be reached. For example, in Fictitia the objective is to reduce morbidity and mortality by providing immunization services throughout the country by January 1987. Keep Fictitia's objective in mind as you read and work through this module.

Once you have established your programme objective, specific targets can be established. A target states in quantitative terms what you hope to accomplish. You will be writing 3 kinds of targets:

- Coverage targets: These targets describe the actual numbers of people to whom vaccines will be given.
- Immunity targets: These targets use the number of people given vaccines to estimate the number of people who can be expected to become immune. (In order to make this estimate, you will need to calculate the number of people for whom the vaccine can be expected to be effective. This is necessary

because vaccine efficacy is always less than 100% and because some people are naturally immune when they are given the vaccines.)

- Disease reduction targets: These targets describe the reduction in morbidity and mortality which can be expected to result from the immunization programme. The focus of any health intervention programme must be to reduce the morbidity and mortality associated with a particular disease problem.

  The disease reduction targets that you will write in this module must be considered best guesses due to the limited reliability of the reporting system in Fictitia (or perhaps that used in your country). As the reporting system improves, the targets can be revised so that they become more realistic.

Even though targets may be inaccurate, they are essential to planning a programme. All of the programme's design should be based on the targets one plans to achieve.

The 3-step process of setting targets can be summarized as follows:

1.0 Establish coverage targets — the number of people to be given vaccines.
2.0 Establish immunity targets — the number of people expected to become immune.
3.0 Establish disease reduction targets — the expected reduction in morbidity and mortality.

After establishing targets, you will design methods and tools for evaluating the achievement of these targets.

If at any time as you read these materials or work through exercises for Fictitia you are confused about what to do or how to do it, discuss your concerns with a Course Facilitator. If you disagree with the methods provided, feel free to discuss these as well and to offer additional suggestions.

STATEMENT OF PURPOSE

In this module you will establish first year targets for the immunization programme in Fictitia. The skills that you practice in the module should prepare you to determine targets for the immunization programme for your country.

1.0 ESTABLISH COVERAGE TARGETS FOR YEAR 1 - The Number of People to Be Given Vaccines.

In order to establish coverage targets for the first year of an immunization programme, you will need to complete 2 steps:

- Select the geographic areas and the priority diseases.
- Determine the target populations.

1.1 Select Geographic Areas and Priority Diseases

To select the geographic areas and the priority diseases for the first year of an immunization programme in a country, you first need to identify the regions and the diseases that were assessed as having high overall priority when you determined regional priorities for the diseases preventable by immunization in the country. Then evaluate these priority regions according to the following criteria in order to select specific areas within these regions (for example, cities, villages) in which immunization programmes are most immediately necessary and most likely to succeed.

CRITERIA FOR SELECTING GEOGRAPHIC AREAS
FOR THE FIRST YEAR OF AN IMMUNIZATION PROGRAMME

a. The areas should be easily accessible, with extensive and usable road systems.

b. The health facilities in the areas should include:
   - a large number of health centres and dispensaries which are accessible, that is, less than 5 kilometres from most of the population;
   - a large number of skilled health personnel who are available to work on immunization activities; and
   - adequate cold chain facilities.

c. The populations in the areas should:
   - have a history of public cooperation with health programmes; and
   - be large and dense enough to justify the expense of an immunization programme.

Exercise A

In this exercise you will select the geographic areas and the priority diseases for the first year of the immunization programme in Fictitia (that is, 1982).

- Read and follow the instructions carefully.
- Write your answers in the space provided.
- When you need data, refer to your answers on Worksheet C on page 17 in the module titled Regional Priorities, and to the description of Fictitia in the Introduction ("Demographic Data," "Health Care in Fictitia," "Current Health Care Delivery Systems").
- If you have questions, consult with a Course Facilitator.

1. Examine the rows labeled "Overall Priority" for each region on Worksheet C in the module titled Regional Priorities. Identify the regions and the diseases that were assessed as having "high" overall priority.

2. For each region that was assessed as "high" overall priority, evaluate the region according to the criteria listed on page 3 in this module. Select specific areas within these regions in which immunization programmes are most immediately necessary and most likely to succeed.

3. Record the geographic areas and the priority diseases for the first year of Fictitia's immunization programme in the space below. As your selections may not be the same as the selections of other participants and Course Facilitators, be prepared to explain your decisions.

When you have completed Exercise A, consult with a Course Facilitator.

1.2 Determine the Target Populations.

The next step in determining coverage targets for an immunization programme is to determine the target population (that is, the number of susceptible people to be given vaccines) in each area selected in Section 1.1.

The guidelines that follow describe how to estimate the target populations for an immunization programme.

a. Target Population for <u>All Diseases Except Neonatal Tetanus</u>:

The target population for these diseases is approximately equal to the number of infants surviving to 1 year. (This assumes that <u>all</u> infants are susceptible. In reality, some have already had the disease and are naturally immune. More information on determining the percentage of infants that are susceptible will be presented later in this module.)

Best towns of Coast.
+ towns of highland
then spread to towns of Delta.
Initially (1st yr) concentrate on coast & highland

Total pop = 16M.
My target = Coast + highland towns = 4.3m.
Then 2nd yr spread to rural areas
→ population would then be
55% of Coast 5.5M.
40% of Highland 1.5M.
7M.

Aim at quality of quantity.
Need to minimise risk of failure

Use the following formula to estimate the target population for all diseases except neonatal tetanus:

- Total population in area* X Birth rate = Number of newborns in area
- Number of newborns X Percent of live births surviving to 1 year** = Number of infants surviving to 1 year (Target population of infants)

*NOTE: If population figures are only available for the current year (for example, 1980) and not for the first year of the immunization programme (for example, 1982), you must compute the population for the first year of the programme using the annual growth rate in the country. Use the information on the following chart to compute the projected population.

POPULATION PROJECTION CHART

General Pattern of Years	Year in Country	Estimated Population Growth Factors Based on 2% Annual Growth Rate
Year for which data are available	1980	—
1 year later	1981	1.020
2 years later	1982	1.040 (1.02^2)
3 years later	1983	1.061 (1.02^3)
4 years later	1984	1.082 (1.02^4)
5 years later	1985	1.104 (1.02^5)
6 years later	1986	1.126 (1.02^6)
7 years later	1987	1.149 (1.02^7)
10 years later	1990	1.219 (1.02^{10})
"n" years later	—	— (1.02^n)

For example, if 1980 census data are available for a country, and the first year of the country's immunization programme is 1982, then to calculate the 1982 population in the country you would multiply the 1980 population times the estimated population growth factor for 1982 (that is, 1.040).

**For example, if the infant mortality rate is 100/1000 live births, or 10%, then the percent of live births surviving to 1 year is 90% or 0.90.

b. Target Population for Neonatal Tetanus:

The preferred strategy for preventing neonatal tetanus would be to identify on the basis of epidemiologic studies those groups of women who are at greatest risk of giving birth to children who develop neonatal tetanus, and to immunize these women. Such studies are lacking in many countries, however. Therefore, other approaches to preventing the disease must be considered. Following are some of these other approaches.

1) Immunize all pregnant women (Note: a problem with this approach is that health services may have great difficulty reaching this target group and, as a result, miss the women at highest risk);
2) Immunize women who bring their children for immunization and all pregnant women;
3) Immunize all women of childbearing age who attend a health facility for any reason; and/or
4) Attempt to administer 1 or 2 doses of vaccine to all women 15-44 years of age and repeat injection during pregnancy if the pregnancy occurs more than 3 years after the second injection of the initial series.

Many countries have selected the second strategy above, that is, to immunize all pregnant women and those women who bring their children for immunization. The target population for tetanus immunization to prevent neonatal tetanus using this strategy is estimated to be twice the number of infants in the target population. This figure will be inexact and should be refined as better information becomes available. At first, however, if a country selects this strategy, the following formula should be used to estimate the target population for neonatal tetanus:

- Target population of infants X 2 = Target population of women

Exercise B

In this exercise you will calculate the target populations for the diseases preventable by immunization for the first year of the immunization programme in Fictitia (that is, 1982).

- Read and follow the instructions carefully.
- Write your answers in the spaces provided.
- When you need data, refer to the description of Fictitia in the Introduction ("Demographic Data").
- If you have questions, consult with a Course Facilitator.

Fold out Worksheet A on page 21 in this module. Take a few minutes to review the column headings. Notice that the areas and diseases selected by Fictitia have been recorded on the worksheet in Columns 1 and 2. Use these selected areas and diseases in determining first year targets for Fictitia's immunization programme.

1. To estimate the target population for all diseases except neonatal tetanus in Fictitia (that is, the target population of infants):

   a. Record the total population in 1980 in the towns and cities with $\geq$ 15,000 population (that is, the large urban areas) in the Coastal Region. $5,090,000

   b. Record the 1982 population growth factor (from the "Population Projection Chart" on page 6). 1·040

   c. Multiply your answer to (a) times your answer to (b) to estimate the total population in 1982.

   $5,090,000 (a) \times 1.040 (b) = 5,293,600$ ~~8,421,600~~

   d. Record the birth rate in the country (expressed as a decimal). 0·04

   e. Multiply your answer to (c) times your answer to (d) to estimate the number of newborns.

   $5,293,600 (c) \times 0.04 (d) = 211794$

f. Record the percent of live births surviving to 1 year (expressed as a decimal). 0.90

g. Multiply your answer to (e) times your answer to (f) to estimate the target population of infants.

$$\frac{0.90}{\text{(e)}} \times \frac{211744}{\text{(f)}} = 1905969.$$

2. To estimate the target population for <u>neonatal tetanus</u> in Fictitia (that is, the target population of women to receive vaccine): I disagree. it is even more than the birth rate ↓

a. Record the target population of infants in the country (from Step 1g). 211744 or

b. Multiply your answer to (a) times 2.

$$\frac{1905969}{\text{(a)}} \times 2 = 3811938$$

Record the target population for each disease preventable by immunization (using your answers to Steps 1g and 2b) in Column 3 on Worksheet A.

Target pop for NNT = all preg ♀ + each ♀ with a child

Exercise C

In this exercise you will write coverage targets for neonatal and non-neonatal tetanus for the first year of the immunization programme in Fictitia (1982).

- Read and follow the instructions carefully.
- Write your answers in the spaces provided.
- If you have questions, consult with a Course Facilitator.

The number of people to whom vaccines will be given, or the target population, was calculated in Exercise B. If these estimates were written as coverage targets, they would follow the format shown below for each disease.

In _____ in _____, _____ infants (or women)
(year) (area) (target population)
will be given vaccine against _____.
(disease)

Refer to your answers for neonatal and non-neonatal tetanus in Column 3 on Worksheet A, and fill in the blanks in the statements below to complete the first year coverage targets for these diseases for the immunization programme in Fictitia.

In 1982 in the large urban areas of the Coastal Region, _____ women will be given vaccine against neonatal tetanus.

In 1982 in the large urban areas of the Coastal Region, _____ infants will be given vaccine against non-neonatal tetanus.

When you have completed Exercise C, discuss your work on Exercises B and C with a Course Facilitator.

2.0 ESTABLISH IMMUNITY TARGETS FOR YEAR 1 - The Number of People Expected to Become Immune.

The number of people expected to become immune depends on two factors:

- the percent susceptible to the disease at the time they receive immunization, and
- the vaccine efficacy rate.

The percent susceptible to the disease at the time of immunization will vary for three diseases: measles, poliomyelitis, and pertussis. The exact age at which children are given these immunizations greatly affects how many of them are susceptible when they are given the vaccines. With increasing age, more children will have been infected with disease-causing agents and fewer children will be susceptible. This is greatly influenced by population density. In areas with high population density, disease transmission will be very intensive and children will be infected at an early age. Therefore, if vaccines are given at a late age in a densely populated area, the percent of children who are susceptible will be low. If the population is less dense and vaccines are given at an early age, the percent of suscepticles will be very high.

For the other three diseases--tetanus, diphtheria, and tuberculosis--almost all children under 24 months are susceptible to the disease.

In Fictitia assume that children will receive their first dose of DPT, poliomyelitis and BCG vaccines at 3 months of age and measles at 9 months of age. The percents susceptible will be as follows:

TABLE 1: PERCENT SUSCEPTIBLE IN FICTITIA

Vaccine	Estimated Percent Susceptible At Time Given Vaccine
Measles	0.70 or 70%
Polio	0.75 or 75%
Diphtheria	0.95 or 95%
Tetanus	1.0 or 100%
Pertussis	0.80 or 80%
BCG	1.0 or 100%

The vaccine efficacy rate means the percent of time a vaccine is effective in causing immunity when it is administered correctly and in a potent state to susceptible people. Table 2 on the next page shows the estimated vaccine efficacy rates.

TABLE 2: VACCINE EFFICACY RATES

Vaccine	Dose	Estimated Vaccine Efficacy Rate
Measles	1	0.95 or 95%
Polio	3	0.95 or 95%
Diphtheria	2 or 3	0.95 or 95%
Tetanus	2 or 3	0.95 or 95%
Pertussis	3	0.80 or 80%
BCG	1	up to 0.80 or 80%*

To determine the number of people who can be expected to become immune to all diseases except neonatal tetanus, use the following formula.

Number Expected to Become Immune to All Diseases Except Neonatal Tetanus:

• Number of people to be given vaccine against the disease (target population of infants)	X	Percent susceptible at time given vaccine	=	Number of susceptibles expected to receive vaccine
• Number of susceptibles expected to receive vaccine	X	Vaccine efficacy rate	=	Number of people expected to become immune

The number of people expected to receive vaccine against neonatal tetanus, that is, the target population of mothers, is different than the number of neonates who are actually susceptible to the disease. Therefore, the procedure for determining the number of susceptibles expected to receive vaccine for neonatal tetanus (that is, the number of unprotected neonates to be protected through maternal immunization) differs from the procedure for determining the number of susceptibles expected to receive vaccine for the other diseases. To determine the number of susceptibles expected to receive vaccine for neonatal tetanus and the number of newborns who can be expected to become immune to the disease, use the following formula.

Number of Newborns Expected to Become Immune to Neonatal Tetanus:

• Number of newborns in area (total population in area times birth rate)**	X	Percent unprotected	=	Number of unprotected newborns to be protected (through maternal immunization)
• Number of unprotected newborns to be protected	X	Vaccine efficacy rate	=	Number of newborns expected to become immune

*NOTE: The vaccine efficacy rate of BCG is currently being intensively reinvestigated. At this time, however, WHO accepts a vaccine efficacy rate for BCG of "up to 80%."

**See footnote on page 6.

Exercise D

In this exercise you will calculate the number of people who can be expected to become immune to neonatal and non-neonatal tetanus in the first year of Fictitia's immunization programme (1982).

- Read and follow the instructions carefully.
- Write your answers in the spaces provided.
- If you have questions, consult with a Course Facilitator.

1. Record in Column 4 on Worksheet A the percent susceptible at time given vaccine for each disease listed in Column 2 (from Table 1, page 11). Express each percent as a decimal.

2. Record in Column 6 the estimated vaccine efficacy rate for each vaccine (from Table 2, page 12). Express each rate as a decimal.

3. Calculate the number of unprotected newborns to be protected (through maternal immunization) against <u>neonatal tetanus</u> by multiplying the number of newborns in 1982 in the large urban areas of the Coastal Region (your answer to Step 1e, page 8) times the percent unprotected from the disease (from Column 4 on the worksheet). Record your answer in Column 5.

4. Calculate the number of susceptibles expected to receive vaccine against <u>non-neonatal tetanus</u> by multiplying the target population for the disease (Column 3) times the percent susceptible to the disease at time given vaccine (Column 4). Record your answer in Column 5. (The numbers of susceptibles for the diseases other than neonatal and non-neonatal tetanus have already been calculated for you and recorded on the worksheet.)

5. Calculate the number of people expected to become immune after receiving immunizations against neonatal and non-neonatal tetanus by multiplying the number of susceptibles expected to receive vaccine against each disease (Column 5) times the vaccine efficacy rate (Column 6). Record your answers in Column 7. (The numbers of people expected to become immune to the other diseases have already been calculated for you and recorded on the worksheet.)

Exercise E

In this exercise you will write immunity targets for neonatal and non-neonatal tetanus for the first year of Fictitia's immunization programme (1982).

- Read and follow the instructions carefully.
- Write your answers in the spaces provided.
- If you have questions, consult with a Course Facilitator.

The numbers of people expected to become immune after receiving immunizations against each disease were calculated in Exercise D. If these estimates were written as immunity targets, they would follow the format shown below for each disease.

In _____ in _____, _____ infants (or women)
(year) (area) (number)
should become immune to _____.
(disease)

Refer to your answers for neonatal and non-neonatal tetanus in Column 7 on Worksheet A, and fill in the blanks in the statements below to complete the first year immunity targets for these diseases for the immunization programme in Fictitia.

In 1982 in the large urban areas of the Coastal Region, _____ women should become immune to tetanus (that is, protection should be given to neonates).

In 1982 in the large urban areas of the Coastal Region, _____ infants should become immune to non-neonatal tetanus.

When you have completed Exercise E, discuss your work on Exercises D and E with a Course Facilitator.

3.0 ESTABLISH DISEASE REDUCTION TARGETS FOR YEAR 1 - The Reduction in Morbidity and Mortality Expected to Result from the Number Made Immune.

Although disease reduction targets will be the most difficult targets to write and to measure, they are very important for programme effectiveness. These targets will need to be revised as morbidity and mortality data improve, and may need to be considered crude estimates until the programme is well under way.

In order to establish disease reduction targets, you will need to know and/or determine the following:

a. Attack rate
b. Number expected to become immune
c. Cases prevented
d. Expected number of cases in target population without immunization
e. Case fatality rate
f. Deaths prevented
g. Expected number of deaths in target population without immunization.

To determine the percent reductions in cases and deaths which can be expected to result from the number of people made immune to each disease, use the following formulas.

Percent Reduction in Cases of a Disease:

• Number of people expected to become immune	X	Attack rate	=	Number of cases expected to be prevented
• Number of cases expected to be prevented	÷	Expected number of cases per year in target population without immunization	=	Percent reduction in cases expected to occur

Percent Reduction in Deaths from a Disease:

• Number of cases expected to be prevented	X	Case fatality rate	=	Number of deaths expected to be prevented
• Number of deaths expected to be prevented	÷	Expected number of deaths per year in target population without immunization	=	Percent reduction in deaths expected to occur

In attempting to follow this process in your own country, you will need to be aware of some situations which are likely to occur.

1. Attack rates may be unavailable. If so, you may wish to plan your initial phase so that you obtain information on attack rates. You may also find it possible to improve the surveillance system to obtain this information.

2. Initially, cases are likely to be underreported. As your reporting system improves, more cases will be reported. You should expect this and your superiors should expect this so that in the initial stages of the programme you may see an increase in the number of reported cases. This should not be taken as evidence that cases are in fact increasing.

3. In countries which adopt the strategy of immunizing all pregnant women and mothers who bring their children for immunization to prevent neonatal tetanus, the calculated percent reduction of neonatal tetanus which is expected to occur is likely to be underestimated. This is because many women who are not pregnant also receive vaccine. If these women become pregnant within 3 years of receiving the vaccine, 0.95 or 95% of their newborns will be protected. Also, pregnant women who are immunized will retain sufficient levels of antibodies to protect subsequent deliveries which occur within 3 years.

   Furthermore, women immunized for the prevention of neonatal tetanus are also themselves protected from tetanus. In many countries tetanus after delivery or after abortion is a serious problem. Immunizing women for the purpose of preventing neonatal tetanus will, therefore, also reduce non-neonatal tetanus.

Despite the situations described above, it is essential to establish targets for reducing morbidity and mortality. Only by concentrating on the reduction of disease can you demonstrate the effectiveness of your programme.

If you have any questions about applying these procedures to your own country, feel free to discuss them with a Course Facilitator or with other participants.

Exercise F

In this exercise you will calculate the percent reduction in cases of and deaths from neonatal and non-neonatal tetanus which can be expected to occur during the first year of Fictitia's immunization programme (that is, 1982).*

- Read and follow the instructions carefully.
- Write your answers in the spaces provided.
- If you have any questions, consult with a Course Facilitator.

1. Calculate the number of cases of neonatal and non-neonatal tetanus expected to be prevented in the urban areas of the Coastal Region by multiplying the number of people expected to become immune to each disease in those areas (Column 7 on Worksheet A) times the attack rate for that disease in those areas (already recorded on the worksheet in Column 8). Record your answers in Column 9. (The numbers of cases of the other diseases expected to be prevented have already been calculated for you and recorded on the worksheet.)

2. Calculate the percent reduction in cases of neonatal and non-neonatal tetanus which can be expected to occur in the urban areas of the Coastal Region by first dividing the number of cases of each disease expected to be prevented in these areas (Column 9) by the expected number of cases of that disease per year in the target population without immunization in the areas (already recorded on the worksheet in Column 10). Record your answers in Column 11. Express your answers as decimals. (The percent reductions expected in cases of the other diseases have already been calculated for you and recorded on the worksheet.)

3. Calculate the number of deaths from neonatal and non-neonatal tetanus expected to be prevented in the urban areas of the Coastal Region by multiplying the number of cases of each disease expected to be prevented in these areas (Column 9) times the case fatality rate for that disease in the region (already recorded on the Worksheet in Column 12).

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*NOTE: In any immunization programme, the number of cases and deaths prevented would have occurred over a period of years. However, for the purposes of this exercise, assume that in the absence of immunization approximately the same number of cases and deaths would have occurred each year. Further assume that the cases and deaths prevented would have occurred during the year of immunization.

Record your answers in Column 13. (The numbers of deaths expected to be prevented from the other diseases have already been calculated for you and recorded on the worksheet.)

4. Calculate the percent reduction in deaths from neonatal and non-neonatal tetanus which can be expected to occur in the urban areas of the Coastal Region by first dividing the number of deaths expected to be prevented from each disease in these areas (Column 13) by the expected number of deaths from that disease per year in the target population without immunization in the areas (already recorded on the worksheet in Column 14). Record your answers in Column 15. Express your answers as decimals. (The percent reductions expected in deaths from the other diseases have already been calculated for you and recorded on the worksheet.)

Exercise G

In this exercise you will write disease reduction targets for neonatal and non-neonatal tetanus for the first year of Fictitia's immunization programme (1982).

- Read and follow the instructions carefully.
- Write your answers in the spaces provided.
- If you have questions, consult with a Course Facilitator.

The percent reductions in cases of and deaths from disease which can be expected to result from the number of persons made immune were calculated in Exercise F. If these estimates were written as disease reduction targets, they would follow the format shown below for each disease.

In _____ in the target population for immunization in _____,
(year) (area)
cases of _____ should be reduced by . or %, and
(disease)
deaths from _____ should be reduced by . or %.
(same disease)

Refer to your answers for neonatal and non-neonatal tetanus in Columns 11 and 15 on Worksheet A, and fill in the blanks below to complete the first year disease reduction targets for these diseases for the immunization programme in Fictitia.

In 1982 in the target population for immunization in the large urban areas of the Coastal Region, cases of neonatal tetanus should be reduced by . or %, and deaths from neonatal tetanus should be reduced by . or %.

In 1982 in the target population for immunization in the large urban areas in the Coastal Region, cases of non-neonatal tetanus should be reduced by . or %, and deaths from non-neonatal tetanus should be reduced by . or %.

When you have completed Exercise G, please discuss your work on Exercises F and G with a Course Facilitator.

211744

Imm → each preg ♀ —
each ♀ + child — 1905969

1 Area	2 Priority Diseases in Area	3 Target Population	4 Percent Susceptibl At Time Gi ity Vaccine*		13 Deaths Expected to be Prevented (Column 9 X Column 12)	14 Expected Number of Deaths in Target Population Without Immunization	15 Percent Reduction in Deaths (Column 13 ÷ Column 14)*
Towns and cities with ≥ 15,000 population in the Coastal Region	Neonatal Tetanus	381,138	1	5	4103	4,319	0.95
	Non-neonatal Tetanus	1905969	1	0	72	76	0.95
	Diphtheria	1905969	.95	0	671	826	0.81
	Measles	1905969	.7	42	5,323	8,004	0.67
	Pertussis	1905969	.8	15	1,464	2,541	0.58
	Poliomyelitis	1905969	.75	0	301	423	0.71
	Tuberculosis	211744	1	0	941 848	1,060	0.89. 0.80

Σ disagree as

* Expressed as a decimal.

** For neonatal tetanus, see page 12.

? Many receive vax & then d

2)

4.0 PLAN EVALUATION OF TARGETS.

Once programme targets have been established, it is essential to plan how achievement of the targets will be evaluated.

Results of evaluation allow you to:

- estimate the effectiveness of the immunization programme in reducing morbidity and mortality,
- determine if coverage targets should be revised to enable achievement of disease reduction targets,
- identify obstacles to achievement of targets.

Since 3 types of targets have been established, ideally a programme's evaluation plan should address each type: coverage, immunity, and disease reduction.

To determine whether or not coverage targets are being achieved, you can conduct a coverage evaluation survey. (More detailed information on the process used to conduct coverage evaluation surveys will be provided later in this course.)

Immunity targets are needed as a step in the process of estimating disease reduction targets. Immunity can be evaluated by conducting serologic surveys. Such surveys are often operationally and technically difficult to conduct. In addition, if coverage targets and disease reduction targets are being achieved, it is highly probable that the population given vaccines is being made immune. For these reasons, the procedures which would be needed to evaluate immunity levels are not described in this course. (If you would like information on conducting serologic surveys, check the Bibliography or consult with a Course Facilitator.)

The success of a programme must ultimately be measured by its effectiveness in reducing morbidity and mortality. A programme is <u>not</u> succeeding if it provides vaccines to the entire population, but does not reduce disease incidence. If this situation occurs, the immunization programme must be examined carefully and problems must be identified, analyzed, and corrected. Only when a programme has data to show that morbidity and mortality have been reduced can its effectiveness be proved. Procedures for evaluating the achievement of disease reduction targets are described in detail in the module titled <u>Surveillance</u>.

CONCLUSION

This module has described procedures for establishing 3 kinds of targets for an immunization programme: coverage targets, immunity targets, and disease reduction targets. Such targets can serve as a basis for planning a national immunization programme, and as a basis for evaluating the effectiveness of the programme. All of a programme's design should be based on the targets one plans to achieve.

A country may need to revise targets as its reporting system improves and more accurate data are obtained. There will also be an opportunity to revise targets as data on the effectiveness of the programme are collected and analyzed.

The Annex to this module contains an extra copy of the worksheet for calculating coverage, immunity and disease reduction targets. The worksheet can be used to set targets for the first year of your country's immunization programme.

When you have completed this module, consult with a Course Facilitator.

ANNEX:

EXTRA COPY OF WORKSHEET

NOTE: The worksheet in this Annex may be adapted for use in establishing first year targets for your country's immunization programme.

1 Area	2 Priority Diseases in Area	3 Target Population	4 Percent Susceptible At Time Giv ty Vaccine*	13 Deaths Expected to be Prevented (Column 9 X Column 12)	14 Expected Number of Deaths in Target Population Without Immunization	15 Percent Reduction in Deaths (Column 13 ÷ Column 14)*

* Expressed as a decimal.

** Except neonatal tetanus.